

C3, INC.

RELEASE NOTICE FOR
Megaframe Quarter Inch Cartridge Tape
C3 3.33 Software

Revised October 22, 1987

SECTION	TITLE	PAGE
1.0	Description of Release	2
2.0	Contents of Distribution Diskettes	3
3.0	Installation Instructions	5
4.0	Installing the Megaframe QIC Server	6
5.0	Tape Names and Tape Configuration Files	7
6.0	Megaframe QIC Utilities	8
7.0	Booting from Quarter Inch Tape	13

1.0 Description of Programs

This Release Notice describes the Megaframe Quarter Inch Cartridge Tape C3 3.33 Software release. This section and the sections that follow provide a description of the product, contents of the distribution diskettes, installation procedures, and new documentation associated with the operation of the Megaframe QIC software.

This release includes the system servers and utilities necessary to utilize the Megaframe Quarter Inch Cartridge drive.

2.0 Contents of Distribution Diskettes

The Megaframe QIC C3 3.33 Software release diskettes are your master copy and have been shipped write-protected. They should not be write-enabled, nor should they be used as working copies.

The release consists of four diskettes, the contents of which are described below.

Megaframe QIC C3 3.33 Software (EV-02589-R03)

Diskette 1 of 4, <Sys> Directory

HdInstall.sub	QicCmds.sub
Exec.run	Signon.run
Sysinit.run	Install.user
Console.user	sys.cmds
Command.run	Submit.run
Signon.txt	ATE.run
t1Sys.font	Submit0.tmp

Diskette 1 of 4, <C3> Directory

MIVolumei.run	QicTable.txt
MQicServer.run	

Diskette 2 of 4, <Sys> Directory

Sys.cmds

Diskette 2 of 4, <C3> Directory

MakeBootTape.run	XpQicCtos.sys
Menu.run	MQicRestorei.run

Diskette 2 of 4, <ReleaseNote> Directory

ReleaseNotice.def

Diskette 3 of 4, <Sys> Directory

Sys.cmds

Diskette 3 of 4, <C3> Directory

ChgVolNamei.run	MQicBackupVolume.run
MQicUtil.run	MQicRestore.run
MQicSelectiveBackup.run	QicBoot.run

Diskette 4 of 4, <Sys> Directory

Sys.cmds

Diskette 4 of 4, <C3> Directory

FpQicCtos.sys
MQicCopy.run
MRequest.2.sys
MQicErasei.run

MQicBackupi.run
MQicMsg.bin
MQicRetensioni.run

3.0 Installation Instructions

NOTICE: The installation of this software release is required on Megaframes with the QIC option. Additionally, CTOS C3 3.32 or a later version of Megaframe CTOS must be installed prior to installing this software.

Use the installation procedure described below to install the Megaframe QIC C3 3.33 Software.

Characters that you must type are shown in **bold-face**. Special keys, such as RETURN and GO, are shown in upper case.

- A. Insert distribution diskette 1 of 4, and Reboot the workstation. Sign on to the workstation with the user name **Install**. Be sure to enter the correct date/time before pressing <GO>.
- B. The installation routine will stop and ask for the volume password of the Megaframe system disk. Enter the appropriate password, if any, and press <GO> to continue the installation.
- C. When prompted, remove diskette 1 of 4, and insert diskettes 2 of 4 as needed. Once the diskette is inserted, pressing <GO> will continue the installation procedure.
- D. Once the installation is complete, remove diskette 4 of 4. Read the section in this release notice for instructions on the operation of the Megaframe QIC software.

NOTICE: The commands associated with the Megaframe QIC Software have been added to the current command file. If you wish to add them to other command files, simply log in with the appropriate user name and type the following command form:

```
Command  Submit  RETURN
Submit
File list                [!Sys]<Sys>QicCmds.sub  GO
[Parameters]
[Force expansion?]
[Show expansion?]
```

4.0 Installing the Megafame QIC Server

The quarter-inch tape server is an installed service running under CTOS control on any File Processor, Terminal Processor, Cluster Processor, Storage Processor, or Data Processor. It provides a user interface that is syntactically a superset of the 3.32 Half-Inch Tape Server.

The QIC server supports one user at any time. One QIC drive per system is allowed.

MQicServer.run is typically installed in a secondary application partition using the MInstallServer.run utility. Of course, it may be installed in a primary partition to meet special configuration requirements. Sample installation (creating the secondary partition first) of the server is as follows:

```
$Run [sys]<sys>MCreatePartition.run,100k,QIC
$Run MInstallServer.run,QIC,[sys]<MfQIC>&
MQicServer.run,[numBuffers],[TapeLength],& [QicSlot]
```

where

- | | |
|--------------|---|
| & | indicates a line continuation. |
| QIC | is an arbitrary name given for the secondary partition being created. |
| [numBuffers] | is an optional parameter specifying an upper limit on the number of 512 byte buffers to be allocated. The allowed range is 40 - 255 with the default being 255. The server will log an error if it cannot create the minimum number of buffers. |
| [TapeLength] | is an optional parameter specifying the expected tape cartridge length. The default is 600 with acceptable values being 300, 450, and 600. |
| [QicSlot] | is an optional parameter specifying the HEX slot number for the location of the QIC Interface board. The default parameter is slot 77, which is the slot closest to the power supply in the A Enclosure. Other acceptable values are X0 where X is the range of 2 ⁻⁷ (i.e. slot 20, 30, 40, etc.). |

5.0 QIC Tape Names and Tape Configuration Files

NOTE: The QIC tape utilities and server do not use a configuration file. For example, QICConfig.sys, etc. have no meaning to the utilities.

QIC tape names can include a file number specification to locate a file on a tape. The format must be one of the following

[Device name] refers to the current tape position, which really means the beginning of tape, since all of the utilities rewind the tape on completion.

[Device name]n refers to file n on the tape, where n is a non-negative integer. n = 0 implies the beginning of tape.

[Device name]+ refers to the file after the last file on the tape (append).

For example,

[QIC]	current file position on quarter-inch tape or beginning of tape as described above.
[QIC] <u>+</u>	append after last file on QIC in mode write, illegal while reading

When selecting Quarter-Inch Tape, only the following names are legal

(a) Read Mode:

[QIC] - first file on QIC same as [QIC]0.

[QIC]n - n'th file on QIC (n could be 0).

(b) Write Mode:

[QIC] - first file on QIC, same as [QIC]0.

[QIC]+ - Append after last file on QIC.

[QIC]0 - beginning of QIC tape (no other integer allowed).

6.0 Megaframe QIC Utilities

MMake Boot Tape

The MMake Boot Tape utility is used to prepare a bootable Quarter-Inch Cartridge for software installation, backup, restore, and running of diagnostics on a MegaFrame equipped with Quarter-Inch Tape hardware.

The boot tape is built on a system that has a QIC Server installed, and the necessary files on disk. The MMake Boot Tape utility is run, which accepts a boot configuration table file to determine the layout of the tape. The table file is a readable ASCII file and is created using a text editor.

The command form for this command is the following:

```
Command  MMake Boot Tape
MMake Boot Tape
  Qic table file
  Master FP sysimage
```

where

Qic table file is the ASCII file describing the layout of the files on the bootable tape. The sample file supplied with the release is "qictable.txt".

Master FP sysimage is the file that is to be booted into the Master FP. This file contains an FP system image linked together with a special QIC driver.

The run file is "MakeBootTape.run." To invoke the utility through the Command Line Interpreter type (or have as a jcl entry)

```
$run [sys]<mfqic>makeboottape.run,<table-file>,&
FpQicCtos.sys
```

where

& indicates a line continuation to the command line interpreter.

<table-file> is the ASCII file describing the layout of the files on the bootable tape. The sample file supplied with the release is "[!sys]<MfQic>qictable.txt".

FpQicCtos.sys is the file that is to be booted into the Master FP. This file contains an FP system image linked together with a special QIC driver. [!sys]<MfQIC>FpQicCtos.sys is supplied.

The utility provides user feedback on each file that is copied to tape. If a syntactic or semantic error is detected, an appropriate message is printed and the utility aborts. No other user interaction takes place.

Boot Tape Format

The first file on the boot tape is always a QIC-bootable FP CTOS image supplied as the second parameter to the utility.

The second file is always a machine-readable derivative of the ASCII table file.

These are automatically put on tape by the MMake Boot Tape utility. The contents and order of the rest of the tape depends on the contents of the table file.

Table File Syntax

The table file has up to 72 entries, each having the following syntax (upper case characters are literals, and lower case characters are symbols for actual values):

```
FILE n TYPE=t, DEST=xp, NAME=nnn, RUN=xxx
```

where

- n** is the file position on tape. It must be greater than 1, and successive entries must have values in consecutive, unique, ascending order. This number reflects the physical file number on the boot tape.
- t** is an upper case alphabetic character indicating the type of file. The various possible types are:
 - S** QIC-bootable CTOS system image for a TP or a CP. For more details on TP and CP booting see below in the section on TP/CP booting that follows.
 - M** Menu program (provided as part of the release) that is run as an application on the TP/CP nearest to the Master FP, and through which the user issues various commands covered in the document on Quarter-Inch Tape Booting. (See section 5)
 - X** Run file that is treated by the menu program as a user-selectable option (i.e. executable file). All backup, restore, and disk initialization utilities fall into this category.

- D Run file for a diagnostic that is selectable as an option from the menu. The diagnostic must be of a type that would normally be invoked through the MegaFrame Diagnostics Monitor program Driver on an FP (i.e. Svr.Diag or Fp. Diag). In the case of booting from QIC, the diagnostic will always be run on the master FP.
- B Tape file containing backed up CTOS files to be restored onto a disk. This file cannot be put on tape by MakeBootTape. For details on how to put this file on tape, see the section on preparing backup files that follows.
- C Tape file containing backed up CTIX partitions or cpio archive to be restored onto a disk.

All entries of types "B" and "C" must be contiguous, and they must be that last entries in the table.

xp is a two-letter abbreviation indicating processor type, and may be TP or CP. It is relevant only for a file of type "S." The text "DEST=xp", may be omitted for entries of all other file types.

nnn is a string of printable ASCII characters excluding <SPACE> and <RETURN>. The maximum length accepted by the utility is 24 characters, with excess characters ignored. For entries of types "X" and "D," the menu will print this string as the option name. For example, the backup run file entry may have the string "Tape Backup Volume." The string is not relevant for all other file types, but is recommended that it contain the relevant disk run file name for maintenance.

xxx is the name of the run file on disk. This is the file that MakeBootTape will pick up and put on tape in the specified sequence. It is not applicable for entries of type "C" or "B" (backed up tape files), for which the text ",RUN=xxx" may be omitted.

Booting of TP's and CP's

The file "XpQicCtos.sys" is supplied as part of the release, and can run on either a TP or a CP. The serial RS-232 port used for communication is automatically selected as follows:

TP: channel 10.

CP: channel 3.

In either case, the port is automatically configured for Async, 9600 baud, zero parity, 7 data bits, 1 stop bit.

The table would typically contain two entries having "XpQicCtos.sys" as the run file: an entry with DEST=TP and the other with DEST=CP. There must be at least one such entry.

The algorithm used by the Fp CTOS to determine which board to boot is as follows:

If the table has an entry for a TP then
boot the nearest TP if any (if none, then crash).

If the table has an entry for a CP then
boot the nearest CP if any (if none, then crash).

If there is no entry for a TP or a CP then crash.

For example, if entries for both board types existed, and if one or more TP was present in the MegaFrame, the nearest TP would be booted. Otherwise, the nearest CP would be booted.

Preparing CTOS backup files

If any backup files are to be put on the same cartridges as the booting software, the appropriate entries of types "B" and/or "C" should be included at the end of the table file, with the file numbers noted.

The MMake Boot Tape utility is then run, and upon completion, the tape is positioned at the beginning of tape. Back ups are performed with the tape name specification as "[QIC]+" to append the archive file(s) thus preserving the bootable tape.

When the back ups on the boot tape are to be restored onto a disk after booting from tape, the tape file name specification should be "[QIC]n" where "n" is the file number that was set in the table file.

MQic Erase

This utility erases the data stored on the QIC tape cartridge. No parameters exist for this program.

MQic Retension

This utility retensions the tape cartridge when installed in the QIC drive. No parameters exist for this program.

NOTICE: It is advisable to erase and retension QIC cartridges each time before use.

MQIC Backup Volume

This utility operates the same as MTape Backup Volume command which is documented in the MegaFrame CTOS Administrator's Manual with the addition that it understands how to backup to the QIC (by replacing [TAPE] with [QIC]).

MQIC Copy

This utility operates the same as the MTape Copy command which is documented in the MegaFrame CTOS Administrator's Manual with the addition that it understands how to backup to the QIC (by replacing [TAPE] with [QIC]).

MQIC Restore

This utility operates the same as the MTape Restore command which is documented in the MegaFrame CTOS Administrator's Manual with the addition that it understands how to restore from the QIC (by replacing [TAPE] with [QIC]).

MQIC Selective Backup

This utility operates the same as the MTape Selective Backup command which is documented in the MegaFrame CTOS Administrator's Manual with the addition that it understands how to backup to the QIC (by replacing [TAPE] with [QIC]).

7.0 Booting from Quarter Inch Tape

The quarter-inch tape boot requires a RS-232' terminal to interact with the programs. This device must be connected to Terminal Processor channel 10 (if one is present) or Cluster Processor channel 3).

In addition to serving as an installation diskette, Diskette 1 of 4 of the release diskettes serves as a "console" diskette. In order to activate console mode, insert distribution diskette 1 of 4 and reboot the NGEN workstation that will serve as the console. When the Sign On screen appears, enter the user name **Console**. The Asynchronous Terminal Emulator will load automatically with the default parameters. The RS-232 cable connected to CP (channel 3) or TP (channel 10) must be attached to channel B on the workstation serving as the console. At this point, the Megaframe may be booted from a bootable QIC tape.

When the Megaframe SRP is booted, only the File Processor and Terminal Processor or Cluster Processor will boot (boot = FP + (TP or CP)). The screen will be cleared and you will see a title message and a menu displayed, followed by a prompt requesting selection of an option.

The following options are available:

- 0 = Set Path / Enter Password
- 1 = Retension a tape
- 2 = Erase a Tape
- 3 = Restore a Volume from Tape
- 4 = Backup a volume to Tape
- 5 = Initialize a New Volume
- 6 = Change Volume Name

Please enter option number:

At this point, you should enter the desired option and press RETURN. These options are described in the following text. When an option completes execution, the system will reboot from tape if it is still installed. (Note that once the option is selected and loaded the tape can be removed if desired.)

Set Path/Enter Password

To change the default path ([Sys]<sys>) or password enter:

0

RETURN

You will then be prompted with

===Enter volume password===

Type GO or ESC when all values are satisfactory.

Volume name [D1]:
Directory [Sys]:
Volume Password :

Enter the actual choices for each item and press RETURN. If no entry is desired press RETURN. The defaults are D1, sys and none respectively. When all values are entered press

<GO>/<ESC>

The utility will then respond with

Path/password accepted.

Tape Retension and Erase

If you wish to retension or erase a tape, select option 1 or 2 respectively.

When the utility is loaded, it announces itself, then prompts:

Please insert Quarter Inch Cartridge, then hit a key to continue:
(Press Y to confirm, N to deny, Q to quit the utility)

At this point, remove the boot tape and insert the tape to retensioned/erased and hit any key. Upon completion, the utility terminates as the others do.

Restore a Volume from Tape

To restore a tape backup of a disk volume to a disk volume respond to the option number prompt with:

3 RETURN

The system will then prompt with the following:

Loading.....

File Restore C3 3.33 (29Jul87)

<GO>/<ESC> to exit interaction, <CR> to continue.

Archive file :
From file list :
To file list :
Overwrite ok ? [NO] :
Confirm each ? [NO] :9
Sequence number [1] :
Merge with existing data ? [NO] :
List file only ? [NO] :
Log file :

Fill in the parameters as necessary to restore the desired disk volume.

For example, if you are restoring from the bootable tape, specify the Archive file [QIC]10 and do not remove the boot cartridge. Respond as follows

```
Archive file : [QIC]10 RETURN
From file list : RETURN
To file list : RETURN
Overwrite ok ? [NO ] :y RETURN
Confirm each ? [NO ] : RETURN
Sequence number [1 ] : RETURN
Merge with existing data ? [NO ] : RETURN
List file only ? [NO ] : GO
Log file :
```

The system will then restore the tape backup to the disk specified in the "To file list" or the default path if nothing is specified.

Backup a Volume to Tape

If you wish to back up a disk volume to quarter-inch tape, respond to the option number prompt with

4 RETURN

The system will then respond

Loading.....

MQIC Volume Backup C3 3.33 (31Jul87)

<GO>/<ESC> to exit interaction, <CR> to continue.

```
Volume or device Name :
Volume or device Password :
Incremental from :
Suppress volume backup ? [NO ] :
Suppress verification ? [NO ] :
Archive file:
Delete existing archive file? [NO ] :
Log file name :
Display structures ? [NO ] :
```

Fill in the parameters as necessary to back up the desired disk volume. Respond to Archive file with the following

[QIC]0 RETURN

NOTE: When specifying a date in the "Incremental from" field, be careful to enter the date/time in a valid format, such as one of the following:

5 August 1987 13:01
8/5/87 1:01 pm
August 5, 1987 1:01 pm
...

The date will be checked when the RETURN key is pressed. If the date/time is not valid, you will hear a beep and the line will be cleared.

At this time remove the bootable tape from the QIC drive and insert a blank tape. If the bootable tape is not removed it may be overwritten by the volume backup.

Once you have pressed <GO> the system will respond with

Performing backup of VOLNAME

and the utility will perform the backup.

Initialize a New Volume

If you wish to reformat and surface-test any disk volume in the system, respond to the option number prompt with:

5

RETURN

The system will then respond with:

Loading.....

MegaFrame Initialize Volume C3 3.33 (31Jul87)

<GO>/<ESC> to exit interaction, <CR> to continue.

Device Name :
Device Password :
Volume Name :
Volume Password :
System Image Sector count [384] :
Log file sector count [32] :
Crash file sector count [0] :
Maximum number of directories on volume [auto] :
Maximum number of files on volume [auto] :
Primary file headers only? [NO] :
Maximum number of files in SYS directory [auto] :
SYS Directory password :
Write protect SYS [NO]:
Suppress format of medium? [NO] :
Number of surface tests [auto] :
Debug? [NO]:
Log file :
Bad spots or @-file:

NOTICE: The '@-file' parameter allows the option of entering a file name of a file that contains the bad spots. Simply specify an '@' before the file name (i.e. - @[dl]<sys>Badspotfile). Note that you may enter any combination of @-files and bad spots in the same session. @-file size is restricted to 3072 bytes. Two files may be specified to specify more bad spots.

Fill in the parameters as necessary to format and surface the desired disk volumes. Refer to the MegaFrame CTOS Administrator's Manual for more information on MIVolume. (Note that this interactive version does not include all the parameters that the non-interactive version includes.)

At the end of MIVolumeI.run, the system will respond with the message

Normal termination

Please insert system cartridge, then hit <CR> key to reload menu program.

Press the RETURN key at this time to get the menu display again.

Change Volume Name

To change the volume name/password of a disk, respond to the option number prompt with:

6 RETURN

The system will then prompt with the following:

Loading.....

<GO>/<ESC> to exit interaction, <CR> to continue.

Device name :
Device password :
Old volume password :
New volume name :
New volume password :

Fill in the parameters as desired to update the desired disk's volume name and password.